Claims 1 and 16 have been amended to positively recite the electrical component solely in an effort to expedite prosecution.

In view of the foregoing amendment, the Applicants request the Examiner withdraw the §112 rejection of Claims 1-43.

II. Rejection of Claims 1-4, 6-11, 13-17, 19-24 and 26-28 under 35 U.S.C. §102

The Examiner has rejected Claims 1-4, 6-11, 13-17, 19-24 and 26-28 under 35 U.S.C. §102(a) as being anticipated by "Anodic Oxidation and Reliability of MEMS Poly-Silicon Electrodes at High Relative Humidity and High Voltages" by Shea, *et al.* ("Shea"). However, the Applicants submit herewith the Affidavit of Susanne Arney with supporting Exhibits in response to the Examiner's rejections of Claims 1-4, 6-11, 13-17, 19-24 and 26-28 in view of Shea. The Affidavit of Susanne Arney establishes that the subject matter of Claims 1-43 of the present application was conceived and actually reduced to practice prior to the publishing date of Shea. Thus, Shea is not a proper prior art reference. Accordingly, the Applicants respectfully request the Examiner to withdraw the §102 rejection with respect to Claims 1-4, 6-11, 13-17, 19-24 and 26-28.

III. Rejection of Claims 1-5, 7-11, 14-18, 20-24, 27 and 28 under 35 U.S.C. §102

The Examiner has rejected Claims 1-5, 7-11, 14-18, 20-24, 27 and 28 under 35 U.S.C. §102(b) as being anticipated by each of "Enhanced Moisture Protection of Electronic Devices by Ultra-Thin Polyimide films" by Burack, *et al.* ("Burack"), "A Moisture Protection Screening Test for Hybrid Circuit Encapsulants" by Mancke ("Mancke") and "The Influence of Passivation Layer

on Aluminum Corrosion on Simulated Microelectronics Circuit Pattern" by Wada, *et al.* ("Wada"). However, neither Burack, Mancke nor Wada disclose a sensor trace configured to oxidize at a rate greater than an oxidizable electrical component associated with the sensor trace when the sensor trace and the electrical component are exposed to a same oxidizing environment, as recited in Claims 1 and 16.

Burack merely discloses test samples of 24-pin ceramic DIP's with a metallized triple-track pattern of Ti-Pd-Au (page 216, second column, "Electrical Testing" paragraph), wherein the test samples are used to measure leakage current between the outer tracks and the grounded center track (page 217, first column, first paragraph). However, Burack fails to even mention a sensor trace configured to oxidize at a rate greater than an oxidizable electrical component. Rather, the tracks are identical except for their biasing, which does not disclose or even suggest that one of the tracks may oxidize at a rate greater than an undisclosed electrical component. Therefore, Burack fails to anticipate Claims 1 and 16 of the present application.

Mancke merely discloses a triple track circuit comprising three parallel lines on an insulator substrate, wherein the outer two tracks are shorted together at one end and biased at +180 V and the center line is grounded (pages 492-493, "Experimental" paragraphs), wherein the circuit is used to measure leakage current and path resistance (page 494, first column, second full paragraph). However, like Burack, Mancke fails to even mention a sensor trace configured to oxidize at a rate greater than an oxidizable electrical component. Rather, the tracks are identical except for their biasing, which does not disclose or even suggest that one of the tracks may oxidize at a rate greater than an undisclosed electrical component. Therefore, Mancke also fails to anticipate Claims 1 and 16 of the present application.

Wada merely discloses aluminum stripes formed on oxidized silicon wafers (page 733, first column, "*Samples*" paragraphs), wherein the stripes are used to measure leakage current and resistance. However, like Burack and Mancke, Wada fails to even mention a sensor trace configured to oxidize at a rate greater than an oxidizable electrical component. Rather, the stripes are identical, such that each of the stripes will oxidize at the same rate as the other stripes. Therefore, Wada also fails to anticipate Claims 1 and 16 of the present application.

Accordingly, Burack, Mancke and Wada each fail to disclose every element of Claims 1 and 16 of the present application. Therefore, Claims 1 and 16 and their dependent Claims are not anticipated by Burack, Mancke or Wada. Consequently, the Applicants request the Examiner withdraw the §102 rejection of Claims 1-5, 7-11, 14-18, 20-24, 27 and 28.

IV. Rejection of Claims 29-43 under 35 U.S.C. §103

The Examiner has rejected Claims 29-43 under 35 U.S.C. §103(a) as being unpatentable over Shea, Burack, Mancke or Wada in view of "A surface conductivity moisture monitor for hermetic IC packages") by Lowry ("Lowry"). However, since Shea is not a prior art reference as discussed above, combining the teaching and suggestions of Shea with Lowry is improper and ineffective in rendering obvious the inventions set forth in Claims 29-43.

In addition, as discussed above, Burack, Mancke and Wada each fail to teach, suggest or even mention a sensor trace configured to oxidize at a rate greater than an oxidizable electrical component associated with the sensor trace when the sensor trace and the electrical component are exposed to a same oxidizing environment, as recited in Claim 29. Moreover, Lowry fails to cure the shortcomings of Burack, Mancke and Wada. More specifically, Lowry merely discloses a

sensor comprising an interdigitated pattern of aluminum stripes on a silicon dioxide substrate and biased with 50 V dc, wherein the sensor is used to measure leakage current to measure moisture. However, like Burack, Mancke and Wada, Lowry fails to even mention a sensor trace configured to oxidize at a rate greater than an oxidizable electrical component. Rather, the stripes taught in Lowry are identical, such that each of the stripes will oxidize at the same rate as the other stripes.

Therefore, the combination of Lowry and one of Shea, Burack, Mancke and Wada fails to support a *prima facie* case of obviousness of Claim 29 of the present application. Accordingly, Claim 29 and its dependent claims are not obvious in view of such combinations. Consequently, the Applicants request the Examiner withdraw the §103 rejection of Claims 29-43.

V. Additional References Made of Record

The Applicants believe that the additional references made of record and not relied upon by the Examiner are not particularly pertinent to the claimed invention, but the Applicants retain the right to address these references in detail, if necessary, in the future.

VI. Conclusion

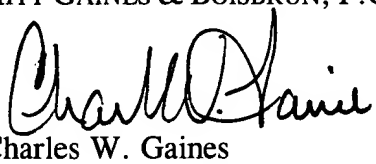
In view of the foregoing remarks, the Applicants now see all of the Claims currently pending in this application to be in condition for allowance and therefore earnestly solicit a Notice of Allowance for Claims 1-43.

Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached page is captioned **"Version with markings to show changes made."**

The Applicants request the Examiner to telephone the undersigned attorney of record at (972) 480-8800 if such would further or expedite the prosecution of the present application.

Respectfully submitted,

HITT GAINES & BOISBRUN, P.C.



Charles W. Gaines
Registration No. 36,804

Dated: 12/2/02

P.O. Box 832570
Richardson, Texas 75083
(972) 480-8800

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

(1) Please amend Claim 1 as follows:

1. (Amended) An oxidation sensor for an electrical circuit, comprising:

a conductor located on an insulating substrate; [and]

a sensor trace located on the insulating substrate adjacent the conductor; and

an oxidizable electrical component associated with the sensor trace, wherein the sensor trace is [and] configured to oxidize at a rate greater than [an] the electrical component [associated with the sensor trace] when the sensor trace and the electrical component are exposed to a same oxidizing environment.

(2) Please amend Claim 16 as follows:

16. (Amended) A method of manufacturing an oxidation sensor for an electrical circuit, comprising:

forming a conductor on insulating substrate; and

forming a sensor trace located on the insulating substrate adjacent the conductor; and

associating an oxidizable electrical component with the sensor trace, wherein the sensor trace is [and] configured to oxidize at a rate greater than [an] the electrical component [associated

with the sensor trace] when the sensor trace and the electrical component are exposed to a same oxidizing environment.

(3) Please amend Claim 29 as follows:

29. (Amended) A micro-electromechanical device, comprising:

an actuator;

an actuation mechanism;

an oxidizable electrical component; and

an oxidation sensor, comprising:

a conductor located on an insulating substrate; and

a sensor trace located on the insulating substrate adjacent the conductor and configured to oxidize at a rate greater than the electrical component trace when the sensor trace and the electrical component are exposed to a same oxidizing environment.